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TITLE : METHOD OF FORMING SILVER WIRING PATTERN

ABSTRACT : PROBLEM TO BE SOLVED: To obtain a method of forming a silver wiring pattern at low process costs using a silver wiring material having high oxidation resistance, low electrical resistance, small resistance temperature coefficient, and capable of improving EM resistance by doping palladium or the like.

SOLUTION: A silver wiring pattern is formed on a semiconductor substrate by applying a solution having superfine particles of silver independently dispersed therein with its viscosity 1000 cP or less at room temperature, onto the semiconductor substrate. The solution is prepared by blending such an organic solvent as to be hard to evaporate at room temperature, and to evaporate during drying and baking step of forming silver wiring on the semiconductor substrate with superfine particles of silver or silver oxide having grain diameters ranging from 0.001 to 0.1 μm. In the solution, the surfaces of the superfine particles are independently dispersed while covered with the organic solvent. After the application of the solution, the resulting semiconductor substrate is heated to evaporate the organic solvent. Then, a silver film whose thickness is 2 μm or less is formed on the semiconductor substrate, after which unnecessary portions are removed by etching, thereby forming the silver wiring pattern on the semiconductor substrate.

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